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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,485	03/09/2001	Donald Henry Willis	PU010032	7267

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EXAMINER

SHAPIRO, LEONID

ART UNIT

PAPER NUMBER

2673

DATE MAILED: 11/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/803,485

Applicant(s)

WILLIS ET AL.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☒ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1-29 rejected under 35 U.S.C. 112, second paragraph. For independent claims 1, 11, 14, the phrase "less likely" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "less likely"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 11, 14, 16, 21-23, 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwaki (JP Patent No. 08-088770) in view Takahashi et al. (US Patent No. 6,181,368 B1) and further in view of Levine (US Patent No. 4,499,497).

As to claim 1, Iwaki teaches a method for image processing with: dividing a video signal for a picture into a higher brightness level signal and lower brightness level signal, delaying one of the signals (Drawing 1, items 1-12, in Detailed Description See page 1-3, paragraphs 008-0015).

Iwaki does not show low pass filtering lower brightness level signal.

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Takahashi et al. teaches how to remove the noise components for low brightness area using low pass filters (See Fig. 5, 22-23, items 34, 0-B, in description See Col. 7, Lines 40-44).

Iwaki and Takahashi et al. do not teach combining low pass filtered lower brightness level signal and delay matched higher brightness level signal to generate modified video signal less likely to result in sparkle artifacts in imager.

Levine teaches combining low brightness video signal and delayed signal to provide fully processed video signal (See Fig. 1-2, items 27-29, in description See Col. 3, Lines 44-55). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Takahashi et al. and Levine approaches for reducing sparkle artifacts in the Iwaki apparatus to improve signal-to-noise ratio (See Col. 1, Lines 35-40 in Levine).

As to claim 11, Iwaki teaches a circuit for image processing with: means for dividing a video signal for a picture into a higher brightness level signal and lower brightness level signal, means for delaying one of the signals (Drawing 1, items 1-12, in Detailed Description See page 1-3, paragraphs 008-0015).

Iwaki does not show means for low pass filtering lower brightness level signal.

Takahashi et al. teaches how to remove the noise components for low brightness area using low pass filters (See Fig. 5, 22-23, items 34, 0-B, in description See Col. 7, Lines 40-44).

Iwaki and Takahashi et al. do not teach means for combining low pass filtered lower brightness level signal and delay matched higher brightness level signal to generate modified video signal less likely to result in sparkle artifacts in imager.

Levine teaches means for combining low brightness video signal and delayed signal to provide fully processed video signal (See Fig. 1-2, items 27-29, in description See Col. 3, Lines

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44-55). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Takahashi et al. and Levine approaches for reducing sparkle artifacts in the Iwaki apparatus to improve signal-to-noise ratio (See Col. 1, Lines 35-40 in Levine).

As to claim 21, Iwaki teaches a circuit for image processing with decomposer for dividing a video signal for a picture into a higher brightness level signal and lower brightness level signal, delaying one of the signals (Drawing 1, items 1-12, in Detailed Description See page 1-3, paragraphs 008-0015).

Iwaki does not show low pass filtering lower brightness level signal.

Takahashi et al. teaches how to remove the noise components for low brightness area using low pass filters (See Fig. 5, 22-23, items 34, 0-B, in description See Col. 7, Lines 40-44).

Iwaki and Takahashi et al. do not teach an algebraic circuit for combining low pass filtered lower brightness level signal and delay matched higher brightness level signal to generate modified video signal less likely to result in sparkle artifacts in imager.

Levine teaches means for combining low brightness video signal and delayed signal to provide fully processed video signal (See Fig. 1-2, items 27-29, in description See Col. 3, Lines 44-55). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Takahashi et al. and Levine approaches for reducing sparkle artifacts in the Iwaki apparatus to improve signal-to-noise ratio (See Col. 1, Lines 35-40 in Levine).

As to claims 2, 14, 23, Iwaki teaches dividing video signal in accordance with a transition between lower and higher gain portions of a gamma table (Drawing 1, items 1-12, in Detailed Description See page 1-3, paragraphs 008-0015).

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As to claims 3-4, Iwaki teaches selecting a brightness level threshold, comparing successive input brightness levels of video signal to selected threshold; for each input brightness level greater than threshold in comparing step, assigning to higher brightness level signal a brightness level equal to a difference between greater input brightness level and threshold and assigning to lower brightness level signal a brightness level equal to threshold; and, for each input brightness level less than threshold in comparing step, assigning to higher brightness level signal a brightness level equal to zero and assigning to lower brightness level signal a brightness level equal to input brightness level (Drawing 1, items 1-12, in Detailed Description See page 1-3, paragraphs 008-0015).

As to claims 6, 16, 25, Iwaki teaches step of delaying higher brightness level signal by time delay (See Drawing 1, item 1-3, 12, in Detailed Description See page 1-3, paragraphs 008-0015).

As to claim 22, Iwaki teaches decomposer circuit has a selectable threshold value (See Drawing 1, item 1-3, 12, in Detailed Description See page 1-3, paragraphs 008-0015).

1. Claims 5, 15, 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwaki and Takahashi et al. and Levine as aforementioned in Claim 1 in view of Jang (US Patent No. 5,361,094).

Iwaki and Takahashi et al. and Levine do not teach step of low pass filtering lower brightness level signal in accordance with normalized 1:2:1 Z-transform, lower brightness level signal being thereby subjected to a time delay.

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Jang shows how to use normalized Z-transform in CCD color camera with gamma correction (See Fig. 4, items 50, 56, 56a, in description See Col. 3, Lines 46-57). It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate Jang approach for reducing sparkle artifacts in the Iwaki apparatus to improve signal-to-noise ratio (See Col. 1, Lines 35-40 in Levine).

4. Claim 7-9, 17 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwaki, Takahashi et al. and Levine as aforementioned in claims 1, 11, 21 in view Jang (Us Patent No. 5, 361,094).

Iwaki, Takahashi et al. and Levine do not show applying sparkle reducing steps for luminance signal for picture; delaying chrominance signals for picture and generating a plurality of video drive signals from modified luminance signal and delayed chrominance signals.

Iwaki, Takahashi et al. and Levine teach to decompose signal in high and low brightness signal, low pass filter low brightness signal and delay match high brightness signals and then combine both of them. Jang teaches to separate signal in two chrominance and luminance signals (See Fig. 3, items 42, 44, 46, in description SEE Col. 3, Lines 33-43).

Luminance is a brightness signal which depends on brightness level will be treated by Iwaki, Takahashi et al. and Levine as discussed above. Chrominance signal being color data do not need processing for the same reasoning as high brightness signal. It would have been obvious to one of ordinary skill in the art at the time of invention to treat luminance signal with low brightness signal and chrominance signal, and high brightness luminance signal and to

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incorporate Jang separation approach for reducing sparkle artifacts in the Iwaki, Takahashi et al. and Levine apparatus to improve signal-to-noise ratio (See Col. 1, Lines 35-40 in Levine).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

The Okada et al. (US Patent No. 5,247,169) reference discloses method of and an apparatus for picking up an image of the surface of an object to be inspected.

The Tsukui (US Patent No. 5,589,880) reference discloses television camera using two image pickup devices with different sensitivity.

The May (US Patent No. 5,978,047) reference discloses blemish concealment in video signals.

The Iu (US Patent No. 5,442,407) reference discloses video signal noise reduction system using time-varying filter coefficients.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Is
November 22, 2002



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